CLAIMS

1. A device for operating on a moving laminar material, in particular for a bag-making machine, said machine being of the type having at least one work unit (2) and actuating members (27) adapted to cause advancing of the laminar material (3) at a reference speed V_R, the device comprising:

– at least one rotating body (6) having a rotation axis (6a) and a rotation speed ω,

– at least one guide member (5) in engagement with said rotating body (6) at an eccentric position with respect to said rotation axis (6a) and movable along a circumferential trajectory (7) having a work stretch (7a),

– said guide member (5) being connected with said work unit (2) and having, in said circumferential trajectory (7), a tangential speed T with a work component T_L parallel to the laminar material (3),

– and drive means (9) designed to selectively vary said rotation speed ω and reference speed V_R in a manner adapted to make said work component T_L in said work stretch (7a) and said reference speed V_R substantially equal to each other.

2. A device as claimed in Claim 1, wherein alternately said reference speed V_R and rotation speed ω are substantially constant and wherein said drive means (9) is adapted to alternately impose a variable speed to said rotating body (6) and laminar material (3) which is correlated with the cosine of a work angle α included between said tangential speed T and work component T_L.

3. A device as claimed in Claim 2, wherein said reference speed V_R of said laminar material (3) is substantially constant and wherein said drive means (9) is adapted to impose a rotation speed ω to said rotating body (6) and a tangential

speed T to said guide member (5) that are variable in inverse proportion to the cosine of said work angle α.

4. A device as claimed in Claim 3, wherein a symmetry plane (8) is provided that is perpendicular to the laminar material (3) and passes through said rotation axis (6a) and wherein said work stretch (7a) extends at said symmetry plane (8) and transversely of same, and at said rotation axis (6a) it defines a central angle β equal to or smaller than 120°, said guide member (5) having a tangential speed T included between a minimum value equal to that of the reference speed V_R, at said symmetry plane /8), and a maximum value equal to or smaller than twice said minimum value.

5. A device as claimed in Claim 2, wherein said rotation speed ω of said rotating body (6) is substantially constant and wherein said drive means (9) is active on said actuating members (27) of said laminar material (3) to impose a reference speed V_R to said laminar material (3) that is variable in proportion to the cosine of said work angle α.

6. A device as claimed in Claim 1, wherein said drive means (9) comprises at least one electric motor (10) , electronic devices (12) active on said electric motor (10) to vary the rotation speed of same, and sensors (13, 16) to detect at least the position of said guide member (5) along said circumferential trajectory (7), said electronic devices (12) being interlocked with said sensors (13, 16).

7. A device as claimed in Claim 6, wherein said electric motor (10) is a direct current brushless motor and wherein said electronic devices (12) comprise SLM or Speed Loop Module circuits.

8. A device as claimed in Claim 1, wherein said drive means (9) comprises at least one motor (10) and transmission members extending downstream of said

motor (10), and wherein said transmission members comprise non-circular kinematic elements adapted to convert a substantially constant rotation speed of said motor (10) into a variable rotation speed.

9. A device as claimed in Claim 8, wherein said non-circular kinematic elements comprise at least one shaped pulley (17) having a major symmetry axis (17b) and a minor symmetry axis (17c) orthogonal to each other and substantially defining virtual diameters of virtual wheels (W_1, W_2), a rotation center (17a) of said shaped pulley (17) being provided at the intersection of said major and minor symmetry axes (17b, 17c).

10. A device as claimed in Claim 1, wherein means (20) for adjusting the position of said guide member (5) relative to said rotation axis (6a) is provided, in order to select the diameter of said circumferential trajectory (7).

11. A device as claimed in Claim 1, wherein support means (4) interposed between the work unit (2) and said guide member (5) is provided, which comprises deformable compensation devices (21) adapted to allow position variations of the work unit (2) in a direction perpendicular to the laminar material (3) in the presence of stresses in a direction perpendicular to the laminar material (3).

12. A device as claimed in Claim 1, wherein support means (4) interposed between the work unit (2) and said guide member (5) is provided, which comprises at least one framework adapted to keep the angular lying arrangement of the work unit (2) substantially constant with respect to the laminar material (3).

13. A device as claimed in Claim 12, wherein said framework comprises a frame having two crosspieces (24) that are substantially parallel to each other, at least one of said crosspieces (24) being movable together with one said guide

member (5), and at least two column-shaped posts (25) extending between said crosspieces (24) at right angles thereto, said column-shaped posts (25) slidably engaging at least one of said crosspieces (24).

14. A device as claimed in Claim 13, wherein one said crosspiece (24) is movable together with one said guide member (6) and a second crosspiece embodies a carriage (29) constrained to carry out a linear movement and driven by said column-shaped posts (25).

15. A device as claimed in Claim 12, wherein a plurality of said rotating bodies (6) is provided and they are disposed consecutive to each other in a direction parallel to said reference speed V_R, and wherein said framework comprises at least one crosspiece (24) extending like a tie-rod and adapted to interlock said rotating bodies (6) with each other on rotation.

16. A process for operating on a moving laminar material, in particular for a bag-making machine, said machine being of the type having at least one work unit and actuating members adapted to cause advancing of the laminar material at a reference speed, the process consisting: in moving at least one guide member connected with said work unit in a circumferential trajectory, said guide member having, along said circumferential trajectory, a tangential speed with a work component parallel to said reference speed; and in selectively varying said tangential speed of said guide member and said reference speed of said laminar material in a manner adapted to keep said work component substantially equal to said reference speed at a work stretch of said circumferential trajectory.

17. A process as claimed in Claim 16, wherein said reference speed is maintained substantially constant and wherein said tangential speed of said guide member is varied in inverse proportion to the cosine of a work angle α

included between said tangential speed and said work component.

18. A process as claimed in Claim 16, wherein said tangential speed is maintained substantially constant and wherein said reference speed of said laminar material is varied in proportion to the cosine of a work angle α included between said tangential speed and said work component.